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COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
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June 10, 2003

TO: Each Supervisor

FROM: Thomas L. Garthwaite, M.D.
Director and Chief Medical Officer

Jonathan E Fielding, M.D., M.P.H.
Director of Public Health and Health Officer

SUBJECT: **METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) IN THE COUNTY JAILS**

This is to update you regarding Methicillin-resistant *Staphylococcus aureus* (MRSA) in the Los Angeles County Jail following the Department of Health Services' June 3, 2003 report to this Board (attached).

There were 134 infections in the Jail in May 2003, updating our previously reported preliminary number of 116 for the first three weeks in May. This increase is not unanticipated due to: (1) a recent increase in arrest rates; (2) better earlier identification; and (3) possible higher MRSA rates among entering inmates.

The Joint Public Health-Jail MRSA Task Force met on Monday, June 9, 2002 to review the progress of implementing the control recommendations. Public Health staff is assisting the Jail in reviewing appropriate control measures and developing appropriate education about MRSA for inmates and correctional staff. New initiatives include working with DHS facilities that treat inmates to follow MRSA wound protocols and better identification of inmates who are being hospitalized with this disease.

If you have questions or need additional information, please let either of us know.

TLG/JEF:al
tgjfes061003MRSA update

Attachment

c: Chief Administrative Officer
County Counsel
Executive Officer, Board of Supervisors

DHS Remarks on Methicillin-resistant *Staphylococcus aureus* (MRSA) in the County Jails

before the Los Angeles County Board of Supervisors

by Jonathan E. Fielding, M.D., M.P.H. Director of Public Health and Health Officer

June 3, 2003

The Los Angeles County Department of Health Services was notified in June 2002 of an increase in MRSA wound infections in inmates by staff at the Los Angeles County Jail. This is an update following the Department's May 3, 2003 report.

Trends in Infections

Total Number of Infections: In any sustained outbreak more cases are initially identified as awareness, screening and surveillance activities are established and implemented. We continue to note this pattern in inmate MRSA infections.

> The number of inmates with new MRSA infections was 109 in April and 116 in the first 23 days of May.

Many of the recommendations by Public Health could increase the number of MRSA infections identified by the Jail, for example encouraging inmates to see a doctor if they have a skin infection and encouraging doctors to culture all skin infections. Therefore, in the short-term we do not believe that the number of new infections each month is a good or useful measure of progress of control of MRSA. Too much emphasis on the total number could act as a disincentive for the identification and treatment of inmates with MRSA and this would be detrimental to control efforts.

Alternate Measure: An alternate measure of MRSA control is the number of new infections identified within 5 and within15 days of admission to the Jail. As the Jail is able to implement control measures to prevent the spread of MRSA we expect that the percent of infections identified early will increase, even if total number of infections increases in a month. What we want to see is a decrease in the percent of infections identified late because these infections most likely represent spread of MRSA within the Jail and not imported cases from the community.

- Consequently we are examining two time periods for numbers of MRSA infections.
  - Number of inmates that were identified with MRSA in the first five days (an indicator of those entering the jail with MRSA – most likely from previous community transmission); and
  - Total number of inmates identified within 15 days of admittance – this includes those identified in the first five days, but also includes those identified in the following ten days which could be a mix of community acquired disease and intra-jail transmission.

- The percent of MRSA infections identified within 5 days of being admitted to the Jail increased. In the first five months of 2003 14% of infections were identified within 5 days of entry to the jail, compared to 9% in 2002. Furthermore, 33% of infections are currently identified within 15 days of admittance to the Jail versus 21% in 2002 (Figure 1 – attached).

  These changes could reflect two important trends: an increase of MRSA in the community so that more inmates are entering the Jail with MRSA and greater success by the Jail in quickly identifying and culturing inmates with skin infections.

MRSA in the Women's Facility: In 2003, 17% of MRSA infections are in women which is an increase from 12% in 2002. However, new infections in women tend to be identified much earlier than in men. In 2003, 56% of the new infections in women were identified within 15 days of admittance to the Jail, including 34% within 5 days. In men, 28% were identified within 15 days, and only 10% within 5 days. It is unknown why there is such a difference between men and women. Women may be more likely to seek attention early for medical conditions or there may be more intra-Jail transmission of MRSA amongst the men.

Control Efforts

In the long-term we do not expect eradication of MRSA in the Jail. MRSA outbreaks in correctional facilities have been seen in Mississippi, Georgia, Pennsylvania, Missouri, Texas, Ohio, and other areas of California. In fact, the strain of MRSA seen in the Jail has been seen in other Jail outbreaks. Close crowded living conditions, sub-optimal hygiene, sharing personal items and equipment, and misidentification of skin lesions all contribute to the spread of MRSA in correctional facilities. In fact, many of these same conditions exist in other community settings and have contributed to the MRSA outbreaks in schools and athletic teams. The fact that this strain of MRSA is in the community means that inmates will continue to be admitted to the Jail with MRSA and may spread it to others before they are correctly identified and treated.

Recommendations: Though there have been no reports of successful eradication of MRSA in correctional facilities, implementation of control measures should decrease the spread of MRSA Public Health gave the Jail a list of control measures in August of 2002 (attached) and provided the Board with an overview of these control measures in February 2003. The pillars of control include:

- Early identification and proper treatment of inmates with MRSA
- Personal hygiene including increasing access to showers, soap, and laundry
- Environmental control including cleaning dorms, tables, beds, etc., and
  Education of inmates and custody staff about MRSA, how it is spread, and the best way to protect oneself.

These recommendations were drafted with participation from the Centers of Disease Control and Prevention in Atlanta and were based on MRSA control measures taken in other facilities. National guidelines are currently being drafted that are based on the principles of the recommendations we provided the Jail. However, standards and recommendations for

controlling MRSA are still evolving as we are learning more about the transmission of this disease in non-hospital settings.

In addition to the recommendations given in August of 2002, we have recently recommended that the Jail systematically review the medical charts of inmates with MRSA to determine if they had received adequate wound care and antibiotic treatment and to use this information to improve medical care.

Health Education Efforts: Public Health is also working closely with the Sheriff's department developing health education for both inmates and custody staff to help prevent the spread of disease. While education alone will not halt the spread of the disease, it will be important to encourage inmates to self-identify if they have a skin lesion and to encourage better hygiene in the Jail and in the home after they are discharged.

Isolation: It is important to note that in our guidelines we have not recommended isolation.

Isolation for patients with MRSA is commonly used in hospitals. This is because the kind of MRSA found in hospitals tends to be very multi-drug resistant, often only sensitive to powerful intravenous antibiotics. Furthermore, patients in hospitals are sicker than the general population and often have intravenous catheters and other lines in their bodies. This makes it more likely that an infection can become invasive when the patient is exposed to an organism. Hence why hospitals take a very aggressive approach in isolating patients with MRSA from the general population- they don't want the organism spreading to other susceptible patients. However, once the patient with MRSA is sent home, these stringent isolation precautions are no longer implemented because it is assumed that the people surrounding the discharged patient in the home do not have lines or catheters and are not susceptible to invasive disease. It would also be very impractical to continue having family members gown and glove each time they wanted to touch their loved ones.

The practicalities of trying to isolate inmates with MRSA in correctional facilities are overwhelming. It would be difficult to identify specific inmates needing isolation. For example, inmates may be colonized with MRSA and there are not resources to identify each person colonized. There are insufficient numbers of isolation rooms. In addition security issues are critical in determining how inmates can be housed together.

We believe that early identification of inmates with MRSA along with proper wound care and bandaging should be enough to reduce the spread of MRSA. However, isolation may be considered in certain cases for inmates with wounds that are draining with pus and that cannot be easily contained with bandages or those that are recalcitrant in complying with infection control measures.

Antibacterial Soap: At this time, we have not made a formal recommendation that the Jail use a special antibacterial soap. In theory, adequate access to plain soap and water should be sufficient to ensure appropriate hygiene. Further, although this approach has been raised as a possible adjunct to other measures there have not been any reported formal trials of a specially formulated soap in correctional facilities. We also wanted the Jail to implement all the other

recommendations [to identify and treat inmates, to ensure access for maintaining good personal hygiene, and to ensure environmental cleaning] before we recommended what could be an expensive intervention that has not been proven efficacious. Furthermore, the trial of antibacterial soap could be undermined if the other recommendations are not in place. However, we continue to consider this option and an appropriate timing for its implementation.

Needed Resources

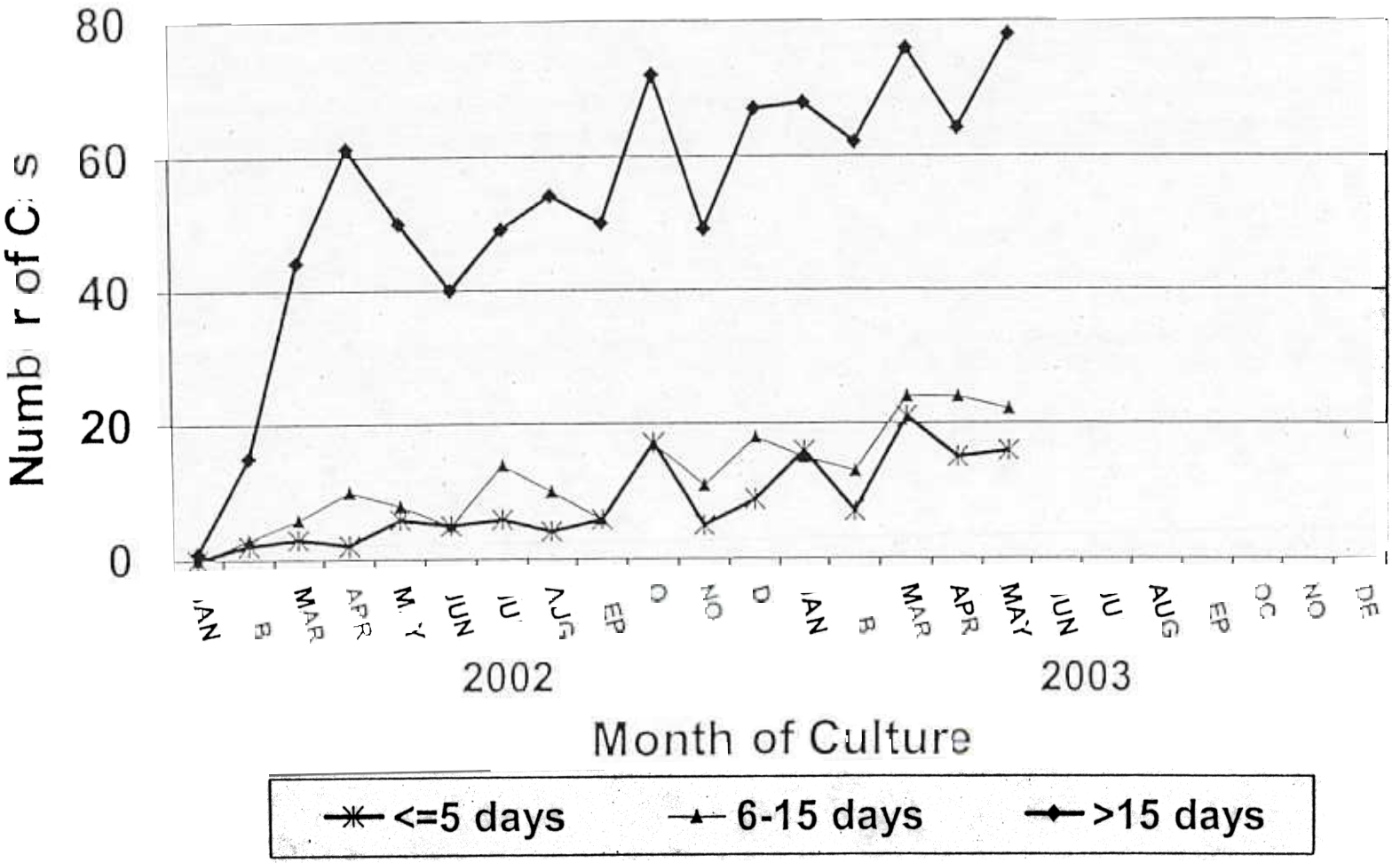
Conditions in correctional facilities, including close crowded living conditions and less than optimal hygiene make outbreaks of infectious disease common in correctional facilities. In addition to MRSA, outbreaks of meningitis, pneumonia, scabies, hepatitis, tuberculosis, and gastrointestinal illness have been reported in correctional facilities. Recent articles in the New York Times and the Washington Post have documented the high burden of infectious disease in inmates. In 1996, newly released inmates accounted for 35% of Americans with tuberculosis. Furthermore, the Maryland Department of Health recently did a survey on prison inmates in that state. Over 30% of the inmates had hepatitis B, C, HIV, syphilis, or a combination of the diseases.

It is for these reasons that Public Health strongly supports the creation of an independent epidemiology and public health unit in the Jail. Such a unit could track infectious disease in the Jail, could facilitate reporting of such diseases to the Health Department, and could reduce the burden of disease amongst inmates and prevent the spread of disease when inmates are released to the community.

Conclusion

We believe that the Jail is making progress in developing policies consistent with our recommendations, sense the seriousness of the outbreak, and are making a real effort to control the MRSA outbreak. However we are not in a position to conduct the on-going monitoring that would be required around the clock in the multiple facilities to report on the progress in implementing the control measures detailed in our recommendations.

T me to F rst MRSA Cu ture* n nmates
By Month of Cu ture
Los Angeles County 2002 May 23 2003



Time from booking date first positive MRSA cultur

5/30/03

COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
Public Health

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August 7, 2002

John H. Clark, M.D.
Chief Physician
Los Angeles County Sheriff's Department
Medical Services Bureau- 8th Floor
450 Bauchet St.
Los Angeles, CA 90012

Dear Dr. Clark:

This letter is in response the request for assistance in describing and managing the increased number of inmates with methicillin-resistant *Staphylococcus aureus* (MRSA) infections.

Background

In June of 2002, Martha Tadesse, an infection control nurse with the Medical Services Bureau of the Los Angeles County Sheriff's Department, notified the Acute Communicable Disease Control Unit (ACDC) of an increase in MRSA soft-tissue infections (boils, abscesses, spider bites) in inmates throughout the Los Angeles County (LAC) jail system. MRSA infections were first noted in February of this year and had increased throughout the spring. Spiders were caught and were determined to be primarily non-biting species. Your office had worked with an outside consultant to develop disinfection and fumigation protocols for spiders.

Ms. Tadesse asked assistance in developing protocols to reduce the spread of MRSA among the inmates. She provided ACDC a line list of inmates with MRSA from February-May, 2002; preliminary analysis of this list revealed an increase in the number of MRSA infections starting in February and peaking in April. Given the increase in MRSA infections, ACDC asked Ms. Tadesse to provide the antibiograms of the MRSA cultures, more detailed clinical information about inmates with MRSA positive wound cultures, and a list of all positive wound cultures since February.

On July 19, 2002, five members of the ACDC staff (including Drs. Bancroft and Civen) met with yourself and Sheriff's Department infection control nurses to discuss the problem of MRSA in the LAC Jail system and to tour the medical facilities and a cell-block at Men's Central Jail, and the Inmate Receiving Center at the Twin Towers.

Recommendations

In developing the enclosed recommendations for the control of MRSA in LAC Jails, ACDC staff reviewed MRSA correctional facility policies from the Centers for Disease Control (CDC) in Atlanta, the Georgia Department of Human Resources, the California Department of Corrections, and the Medical Service Bureau, County of Los Angeles Sheriff's Department. In developing a treatment protocol for skin infections, ACDC carefully analyzed the results of wound cultures and MRSA antibiotic sensitivity patterns of cultures taken from inmates in the spring of 2002 in the LAC jail system. ACDC also consulted with the CDC to develop the protocols.

The recommendations are divided into 3 sections- improving surveillance for MRSA, standardizing treatment of skin lesions, and improving practices that will prevent the transmission of MRSA. You received a draft of these recommendations on August 2nd and enclosed with this letter is a slightly revised version of those recommendations. No significant changes were made. These recommendations, while comprehensive, should also be considered preliminary and ACDC staff will work with you and your staff to further refine the recommendations as circumstances change. We recognize that some of the recommendations may have to be adapted on a case-by-case basis at the different facilities that make up the LAC jail system.

On July 30th, ACDC provided you a surveillance form to use in the medical clinics to track the diagnosis and treatment of skin lesions. This form should help you in both the surveillance for skin infections and standardizing treatment for skin lesions.

Thank you for contacting ACDC about the increase in MRSA soft-tissue infections in inmates in the LAC Jail system. If you have any questions about these recommendations you may contact Elizabeth Bancroft, MD, SM, or Rachel Civen, MD, MPH at 213-240-7941. We will continue to work with you and your staff to control this situation.

Sincerely,

Laurene Mascola, MD, MPH
Chief of Acute Communicable Disease Control

LM:EB:mv

Enclosure

Recommendations to Reduce the Spread of MRSA in the Los Angeles County Jail

Acute Communicable Disease Control
Los Angeles County Department of Health Services
2002

I) SURVEILLANCE FOR MRSA SOFT TISSUE INFECTIONS

1) Encourage all inmates with boils, "spider bites," and skin infections to come to the medical clinic as soon as possible to be evaluated. This can be done on daily medication rounds or in special health education outreach.

2) Initiate active surveillance in the medical units for skin infections. Health clinic staff should maintain a daily log of patients evaluated for skin infections. The log should contain a detailed description of the skin lesions (location of lesion, size of erythema, number and size of pustules, presence of drainage, character of drainage, presence of local pain or heat), fever, cultures sent, treatment regimens, and treatment outcome.

3) Culture all skin infections at initial clinic visit.

4) Cellmates or close contacts of inmates with MRSA should be evaluated for skin lesions.

5) Add a 16th question to 15 medical intake questions on admission to Jail, regarding the presence of skin infections. If inmate responds affirmatively to the presence of skin infection, schedule evaluation in medical clinic within 72 hours.

6) Clearly identify the medical charts of inmates with a history of MRSA colonization or infections

II) STANDARDIZE TREATMENT FOR SOFT TISSUE INFECTIONS

A) Drainage

1) The first step for treatment of pustular lesions is adequate drainage. Drainage can be accomplished with either warm soaks or incision and drainage (I&D). If drainage of pustular lesions is unable to be accomplished in medical unit, the inmate should be referred Los Angeles County Medical Center.

2) For individuals without evidence of cellulitis or systemic signs of infection, without susceptibility to chronic wound infections (diabetes, vascular disease, pressure sores, etc), and without indwelling lines of any kind, drainage alone should be the initial mode of treatment. Antimicrobial therapy should be initiated if the skin infection does not improve or worsens 72 hours after the drainage procedure.

3) For individuals with cellulitis or systemic signs of infection and/or with susceptibility to chronic wound infections and/or with an indwelling line, consideration should be given to treating with antibiotics upon presentation to medical care.

B) Antibiotics

These recommendations, developed in consultation with the CDC, have been **developed specifically** for the Los Angeles County Jail based on the antibiotic sensitivities of the MRSA isolates heretofore reported at the Jail. Widespread adoption of these guidelines in other settings could lead to unforeseen consequences such as drug resistant isolates. Staphylococcal drug resistance against Clindamycin, Mupirocin and Rifampin can develop quickly due to single gene mutations. These medications should always be used in combination when treating Methicillin-resistant Staphylococcal infections.

1) This treatment regimen is considered first-line therapy for MRSA infection:

- Bactrim DS one tablet by mouth twice a day for seven days

PLUS

Rifampin 300 mg by mouth twice a day for seven days

If the patient has an ALLERGY to BACTRIM the following treatment protocol may be used:

Clindamycin 500 mg by mouth three times a day for seven days

PLUS

Rifampin 300 mg by mouth twice a day for seven days.

2) Ensure that all soft tissue and wound culture results are reviewed within 48 hours of receipt and antibiotic therapy is adjusted appropriately (e.g. if the isolate is sensitive to cefazolin, consider using Keflex, etc).

3) If the lesions are still draining at the end of the recommended treatment protocol, consider continuing antimicrobial treatment.

4) If an inmate has a second MRSA infection after adequate resolution of the first infection, treat appropriately until the second infection has completely healed. Then the inmate should have nares cultures. If the nares culture is positive for MRSA, the inmate should be treated with Mupirocin ointment twice a day to the nares for 5 days. Repeat if necessary.

C) Wound Care

) All dressings should be changed by the medical unit daily until the lesion is completely dry and drainage is unable to be expressed.

2) During the weekend, if there are no medical personnel to change the bandages, inmates should change their own dressings. Inmates should be provided with adequate supplies to change their bandages over the weekends and after showers.

3) Inmates and staff should be well educated about the infectivity of wet or soiled bandages. Develop a system to ensure that all dressings are carefully disposed of in the medical facilities, and in the cells or dorms, so that other staff or inmates do not touch the dressings.

III) PREVENTION OF MRSA TRANSMISSION

A) Education

Provide education about MRSA transmission to the inmates. Tell them to refrain from having other inmates pop boils or skin lesions.

2) Encourage improving personal hygiene, including handwashing and using soap.

3) Encourage inmates to seek medical care as soon as possible after they notice a skin lesion.

B) Personal Hygiene

1) Increase inmate shower frequency to daily if possible- especially in those cells, wards, and dorms where there is an active case of MRSA.

2) Ensure availability of soap and encourage use. At this time, antimicrobial soap is not considered necessary.

C) Environment

1) The cell of an inmate with MRSA should receive a thorough cleaning with an antimicrobial cleanser (bleach or another EPA approved disinfectant). This includes the sinks, bed-rails, toilet, and walls. The showers should also be cleaned.

2) If the inmates is housed in an dorm, then the dorm should also be thoroughly cleaned

D) Laundry

Upon diagnosis with MRSA, inmates should receive a shower and a complete change of linen including uniform, underwear, sheets, towels, and blankets.

2) After an inmate is diagnosed with MRSA, all cellmates should receive a shower and a complete change of clothes and linen, including uniforms, underwear, sheets, towels, blankets. This should occur on the same day as the environmental cleaning.

3) Ensure that laundry and drying of laundry is done at a sufficiently high temperature, that linens receive adequate cleaning (e.g. are not all bunched up), and that they are thoroughly dried before being given back to the inmates.

4) Increase the frequency of uniform, underwear, and linen (towels, sheets, blankets) changes.

E) Transfer Policies

1) Attempt to limit inter-facility movement as much as possible for those with open wounds.

2) If an inmate who is infected with MRSA is to be transferred to a new facility, the transferring facility should provide a summary of the inmate's medical record and treatment plan to the new facility.

3) Clearly identify medical charts with inmates with a history of MRSA colonization or infections.

F) Staff Education and Protection

1) Use Standard Precautions in the Medical Clinics.

2) Provide education on the spread of MRSA to jail personnel. Stress that handwashing is the key to prevention.

3) If personnel use gloves when working with inmates with MRSA infection or colonization, then the gloves should be changed and appropriately discarded after touching the inmate.

4) Hands should be washed after discarding gloves.